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| EXAMINER |
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MONIKANG, GEORGE C

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/560,523

**Applicant(s)**

THOMAS ET AL.

**Examiner**

GEORGE C. MONIKANG

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 10/560,523.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SI/88)  
Paper No(s)/Mail Date 12/13/2005  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 4/14/2008 have been fully considered but they are not persuasive.
2. With regards to applicant's arguments that Finn et al fails to disclose receiving information representative of the signal broadcast by a loudspeaker of another communication device, however, the examiner maintains his stand. Finn et al discloses the loudspeaker of zone 1 providing audio for zone 1 and cellular phone 1 (Finn et al, col. 7, lines 28-58).

With regards to applicant's argument that the combined teachings of Finn et al and Boland fail to disclose modifying the signal picked up by a loudspeaker of a communication device and weighting the broadcast signal by a coupling between one or more loudspeakers of at least one other communication device from a microphone. The examiner maintains his stand. Finn et al discloses broadcasting zone 2 by speaker 32 in zone 1 due to an acoustic coupling therebetween (Finn et al, col. 7, lines 28-60). Boland discloses an echo coupling between a speaker and a microphone where a weighted coefficient suppression value is established to cancel the environmental noise (Boland, abstract).

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 6-7, 10-11, 15-16, 19-20 & 22 are rejected under 35 U.S.C. 102(a) as being anticipated by Finn et al, US Patent 6,496,581 B1. (The Finn et al reference is cited in IDS filed 12/13/2005)
3. Re Claim 6, Finn et al disclose device for processing an echo between at least two local communication devices close to one another and coupled to each other by a telecommunication network to attenuate (fig. 2: cell phone 1 & 2; col. 7, lines 40-58; col. 5, lines 62-65), in a signal picked up by at least one microphone of another of said at least two local communication devices (fig. 2: 36 & 38; col. 7, lines 40-58), the components of a signal broadcasted by at least one loudspeaker of at least one communication device (fig. 2: 32; col. 7, lines 28-40), the echo processing device comprising: a receiver for obtaining information representing the signal broadcasted by the at least one loudspeaker of communication device (fig. 2: 32 & 34; col. 7, lines 28-40), a signal processing arrangement for transferring the information obtained via a dedicated coupling with at least one of the other local communication devices (fig. 2: 12 & 16; col. 7, lines 28-58).
4. Re Claim 7, Finn et al discloses the echo processing device according to claim 6, wherein the echo processing device also comprises circuitry obtaining information representing the coupling between at least one loudspeaker of the said at least one communication device and the microphone of the other communication device (fig. 2: 12 & 16; col. 7, lines 28-58).

5. Re Claim 10, Finn et al disclose the echo processing device according to claim 6, wherein the circuitry is arranged for establishing the number of other communication devices and establishing the number of loudspeakers of the other communication devices (col. 7, lines 28-58).
6. Re Claim 11, Finn et al disclose the echo processing device according to claim 10, wherein the echo processing device also comprises: a generator for generating at least one predetermined audible signal (fig. 5: 218 & 258), a receiver for receiving, by means of a coupling with at least one other device, information representing the reception of the audible signal by at least one other device (fig. 2: 32 & 34; col. 11, lines 48-67), the signal processing arrangement being arranged for determining the coupling between a loudspeaker of the said communication device and the microphone of at least one other communication device (col. 12, lines 1-18).
7. Claims 15 & 22 have been analyzed and rejected according to claim 6.
8. Claim 16 has been analyzed and rejected according to claim 7.
9. Claim 19 has been analyzed and rejected according to claim 10.
10. Claim 20 has been analyzed and rejected according to claim 11.

Re Claim 24, Finn et al disclose a system including a plurality of the devices of claim 6 wherein the dedicated coupling is arranged for coupling a wave including the information and an electric component (col. 7, lines 28-60), and the local communication devices are close enough to each other that acoustic waves are coupled between the microphones and loudspeakers of the local communication devices (col. 7, lines 28-60).

Claim 26 has been analyzed and rejected according to claim 24.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-5, 8, 12-14 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finn et al, US Patent 6,496,581, in view of Boland, US Patent Pub. 2003/0123674 A1.

4. Re Claim 1, Finn et al discloses device for processing an echo between at least two local communication devices close to one another and coupled to each other by a communication network to attenuate (fig. 2: cell phone 1 & 2; col. 7, lines 40-58; col. 5, lines 62-65), in a signal picked up by at least one microphone of one of said at least two local communication devices (fig. 2: 36 & 38; col. 7, lines 40-58), the components of a signal broadcasted by at least one loudspeaker on at least one other of said at least two local communication devices (fig. 2: 32; col. 7, lines 28-40), the echo processing device

comprising: a receiver for receiving, via a dedicated coupling with at least one other of said at least two local communication devices (fig. 2: 32; col. 7, lines 28-58), information representing at least one signal broadcast by at least one loudspeaker of at least one other of said at least two local communication devices (fig. 2: 32 & 34; col. 7, lines 28-40), a signal processing arrangement for modifying the signal picked up by at least one loudspeaker of at least one other of said at least two local communication devices from said information representing the broadcasted signal (col. 7, lines 28-58); but fails to disclose weighting the broadcasted signal by a coefficient representing coupling between a loudspeaker and a microphone. However, Boland does (abstract).

5. Taking the combined teachings of Finn et al and Boland as a whole, one skilled in the art would have found it obvious to modify the device for processing an echo between at least two local communication devices close to one another and coupled to each other by a communication network to attenuate (fig. 2: cell phone 1 & 2; col. 7, lines 40-58; col. 5, lines 62-65), in a signal picked up by at least one microphone of one of said at least two local communication devices (fig. 2: 36 & 38; col. 7, lines 40-58), the components of a signal broadcasted by at least one loudspeaker on at least one other of said at least two local communication devices (fig. 2: 32; col. 7, lines 28-40), the echo processing device comprising: a receiver for receiving, via a dedicated coupling with at least one other of said at least two local communication devices (fig. 2: 32; col. 7, lines 28-58), information representing at least one signal broadcast by at least one loudspeaker of at least one other of said at least two local communication devices (fig. 2: 32 & 34; col. 7, lines 28-40), a signal processing arrangement for modifying the signal

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picked up by at least one loudspeaker of at least one other of said at least two local communication devices from said information representing the broadcasted signal (col. 7, lines 28-58) of Finn et al with weighting the broadcasted signal by a coefficient representing coupling between a loudspeaker and a microphone as taught in Boland (abstract) to reduce or eliminate undesirable effects.

6. Re Claim 2, the combined teachings of Finn et al and Boland disclose the echo processing device according to claim 1, wherein the communication device includes the echo processing device (Finn et al, col. 7, lines 28-58).

7. Re Claim 3, the combined teachings of Finn et al and Boland disclose the echo processing device according to claim 2, further including a controller for controlling echo between at least one of the loudspeakers and microphone (Boland, fig. 2: 242; para 0046).

8. Re Claim 4, the combined teachings of Finn et al and Boland disclose the echo processing device according to claim 1 wherein the information received representing at least one broadcasted signal from at least one other communication device was previously weighted by a coefficient representing the coupling between a loudspeaker and the microphone (Boland, abstract).

9. Re Claim 5, the combined teachings of Finn et al and Boland disclose the echo processing device according to claim 4, wherein the signal processing arrangement for modifying the picked up signal is arranged to modify the picked up signal according to the weighted broadcasted signal in the reference echo control signal (Boland, para 0046).



10. Re Claim 8, Finn et al disclose the echo processing device according to claim 7, but fails to disclose wherein the signal processing arrangement is arranged for weighting the information representing the broadcasted signal of the communication device by coefficients associated with information representing the couplings between at least one loudspeaker of the said at least one communication device and the microphone of the other communication device. However, Boland does (abstract).

11. Taking the combined teachings of Finn et al and Boland as a whole, one skilled in the art would have found it obvious to modify the echo processing device according to Finn et al with wherein the signal processing arrangement is arranged for weighting the information representing the broadcasted signal of the communication device by coefficients associated with information representing the couplings between at least one loudspeaker of the said at least one communication device and the microphone of the other communication device as taught in Boland (abstract) to reduce or eliminate undesirable effects.

12. Claim 12 has been analyzed and rejected according to claim 1.

13. Claim 13 has been analyzed and rejected according to claim 4.

14. Re Claim 14, the combined teachings of Finn et al and Boland disclose the echo processing method according to claim 13, wherein the picked up weighted signal is taken into account in a reference echo control signal of the communication device (Boland, abstract).

15. Claim 17 has been analyzed and rejected according to claim 8.

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16. Claims 9 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finn et al, US Patent 6,496,581 and Boland, US Patent Pub. 2003/0123674 A1, as applied to claim 8 above, and further in view of Janse et al, US Patent Pub. 2003/0026437 A1.

17. Re Claim 9, the combined teachings of Finn et al and Boland disclose the echo processing device according to claim 8, but fails to disclose wherein the communication device comprises a plurality of loudspeakers coupled with the at least one communication device (*Janse et al. abstract*) so that (a) the signals reproduced by each loudspeaker of the least one communication device are weighted by respective coefficients representing the couplings between each loudspeaker of the communication device and the microphone of the other communication device (*Janse et al. abstract*) and (b) the weighted signals are added (*Janse et al. para 0030*). However, Janse et al does.

18. Taking the combined teachings of Finn et al, Boland and Janse et al as a whole, one skilled in the art would have found it obvious to modify the echo processing device according to Finn et al and Boland with wherein the communication device comprises a plurality of loudspeakers coupled with the at least one communication device (*Janse et al. abstract*) so that (a) the signals reproduced by each loudspeaker of the least one communication device are weighted by respective coefficients representing the couplings between each loudspeaker of the communication device and the microphone of the other communication device (*Janse et al. abstract*) and (b) the weighted signals

are added (*Janse et al. para 0030*) as taught in Janse et al so a fine tuned model can effectively be made in cases wherein speakers move.

19. Claim 18 has been analyzed and rejected according to claim 9.

Re Claim 23, the combined teachings of Finn et al and Boland disclose a system including a plurality of the devices of claim 1 wherein the dedicated coupling is arranged for coupling a wave including the information and an electric component (*Finn et al. col. 7, lines 28-60*), and the local communication devices are close enough to each other that acoustic waves are coupled between the microphones and loudspeakers of the local communication devices (*Finn et al. col. 7, lines 28-60*).

Claim 25 has been analyzed and rejected according to claim 23.

### ***Conclusion***

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **GEORGE C. MONIKANG** whose telephone number is (571)270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George C Monikang/  
Examiner, Art Unit 2615

6/23/2008

/Vivian Chin/  
Supervisory Patent Examiner, Art Unit 2615